**[6450-01-P]**

**DEPARTMENT OF ENERGY**

**Office of Energy Efficiency and Renewable Energy**

**[Case No. CR-006]**

# Notice of Petition for Waiver of AHT Incorporated from the Department of Energy Commercial Refrigeration Equipment Test Procedures and Partial Grant of Interim Waiver

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of petition for waiver and partial grant of interim waiver, and request for public comment.

**SUMMARY:** This notice announces receipt of and publishes a petition for waiver from AHT Cooling Systems GmbH and AHT Cooling Systems USA Inc. (AHT) seeking an exemption from specified portions of the U.S. Department of Energy (DOE) test procedure for determining the energy consumption of multi-mode commercial refrigeration equipment. ASHRAE Standard 72-2005, incorporated by reference in Appendix B, does not provide for defrost testing with built-in cooling coils into the body of AHT's unique multi-mode commercial refrigeration equipment basic models. Consequently, AHT submitted to DOE an alternate test procedure that allows for testing of six specified basic models with a different defrost cycle. This notice also announces that DOE has granted AHT an interim waiver from the DOE commercial refrigeration equipment test procedures for the specified commercial refrigeration equipment basic models, subject to use of the

alternative test procedure as set forth in this notice. DOE solicits comments, data, and information concerning AHT's petition and its suggested alternate test procedure.

**DATES:** DOE will accept comments, data, and information with regard to the AHT petition until **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may submit comments, identified by Case Number CR-006, by any of the following methods:

- Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.
- E-mail: AS_Waiver_Requests@ee.doe.gov Include the case number [Case No. CR-006] in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format, and avoid the use of special characters or any form of encryption.
- Postal Mail: Mr. Bryan Berringer, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, Petition for Waiver Case No. CR-006, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-0371. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.
- Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. Telephone: (202) 586-6636. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

Docket: The docket, which includes Federal Register notices, comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the docket are listed in the www.regulations.gov index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

**FOR FURTHER INFORMATION CONTACT:** Mr. Bryan Berringer, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-0371. E-mail: Bryan.Berringer@ee.doe.gov.

Ms. Johanna Jochum, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-6307. E-mail: Johanna.Jochum@hq.doe.gov.

**SUPPLEMENTARY INFORMATION:**

## I. Background and Authority

Title III, Part C of the Energy Policy and Conservation Act of 1975 (EPCA), Public Law 94-163 (42 U.S.C. 6311-6316, as codified) established the Energy Conservation Program for Certain Industrial Equipment, which includes the commercial refrigeration equipment. Part C includes definitions, test procedures, labeling provisions, energy conservation standards, and the authority to require information and reports from manufacturers. Further, Part C authorizes the Secretary of Energy to prescribe test procedures that are reasonably designed to produce results that

measure energy efficiency, energy use, or estimated operating costs during a representative average-use cycle, and that are not unduly burdensome to conduct. (42 U.S.C. 6314(a)(3)) The test procedure for commercial refrigeration equipment is contained in Title 10 of the CFR part 431, subpart C, appendix B, Amended Uniform Test Method for the Measurement of Energy Consumption of Commercial Refrigerators, Freezers, and Refrigerator-Freezers.

DOE's regulations set forth at 10 CFR 431.401 contain provisions that allow a person to seek a waiver from the test procedure requirements for a particular basic model of a type of covered industrial equipment when: (1) the petitioner's basic model for which the petition for waiver was submitted contains one or more design characteristics that prevent testing according to the prescribed test procedure, or (2) the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 431.401(a)(1). A petitioner must include in its petition any alternate test procedures known to the petitioner to evaluate the basic model in a manner representative of its energy consumption. 10 CFR 431.401(b)(1)(iii).

DOE may grant a waiver subject to conditions, including adherence to alternate test procedures. 10 CFR 431.401(f)(2). As soon as practicable after the granting of any waiver, DOE will publish in the Federal Register a notice of proposed rulemaking to amend its regulations so as to eliminate any need for the continuation of such waiver. As soon thereafter as practicable, DOE will publish in the Federal Register a final rule. 10 CFR 431.401(l).

The waiver process also allows DOE to grant an interim waiver if it appears likely that the petition for waiver will be granted and/or if DOE determines that it would be desirable for public

policy reasons to grant immediate relief pending a determination on the petition for waiver. 10 CFR 431.401(e)(2). Within one year of issuance of an interim waiver, DOE will either: (i) publish in the Federal Register a determination on the petition for waiver; or (ii) publish in the Federal Register a new or amended test procedure that addresses the issues presented in the waiver. 10 CFR 431.401(h)(1). When DOE amends the test procedure to address the issues presented in a waiver, the waiver will automatically terminate on the date on which use of that test procedure is required to demonstrate compliance. 10 CFR 431.401(h)(2).

## II. Petition for Waiver of Test Procedure and Application for Interim Waiver

On October 25, 2016, AHT filed a petition for waiver and application for interim waiver from the test procedure applicable to commercial refrigeration equipment set forth in 10 CFR part 431, subpart C, appendix B (AHT subsequently sent DOE a letter on March 6, 2017, which responded to questions from DOE. The information from this letter is also represented in this notice). AHT has designed several basic models multi-mode commercial refrigeration equipment that use unique built-in cooling coils deep freeze, freeze, or refrigerate food as needed. Because the cooling coils are built into the body of the units and do not get covered in frost, the coils do not need to be defrosted prior to testing. However, the DOE test procedure and ASHRAE Standard 72-2005, incorporated by reference in Appendix B, assumes that commercial refrigerators or freezers need to be defrosted, or melt the ice from the evaporator coils, for the equipment to function effectively. In particular, the test procedure requires that all refrigerators and freezers with evaporator coils be tested with a full defrost cycle, along with additional defrost cycles in a 24-hour period, depending on how long the test runs (ANSI/ASHRAE Standard 72-2005, "Method of Testing Commercial Refrigerators and Freezers," § 7.8 (Defrost Adequacy Assurance). ASHRAE 72-2005 is incorporated by reference in the DOE test procedure. 10 CFR 431.63(d)(1)). AHT

appliances, however, have no need to defrost their coils. Thus, rather than running one or more defrosting cycles a day to keep the machines operating efficiently, AHT appliances have a defrost (in the generic sense rather than as defined by DOE/ASHRAE) function that operates, under standard conditions, once per week, and at most (through a manual override) twice per week. As a result, the DOE test procedure, which provides for at least one full defrost cycle in a 24-hour period, is not appropriate for these models. Consequently, AHT submitted to DOE an alternate test procedure that allows for testing of six specified basic models with a different defrost cycle.

As previously noted, an interim waiver may be granted if it appears likely that the petition for waiver will be granted, and/or if DOE determines that it would be desirable for public policy reasons to grant immediate relief pending a determination of the petition for waiver. See 10 CFR 431.401(e)(2).

AHT's petition for waiver claims that the DOE test procedure at 10 CFR part 431, subpart C, appendix B does not apply to AHT's advanced models, and would grossly overstate the energy used by these models. These models are multi-mode (i.e., are capable of operating in the ice cream freezer, commercial freezer, and commercial refrigerator temperature ranges) and do not have a typical defrosting cycle (i.e., the cooling coils are built into the body and require defrosts once per week).

To address multi-mode operation, AHT requested that the basic models shall be tested and rated only for operation as ice cream freezers (with integrated average temperature of -15°F +/- 2.0°F and use total display area (TDA) to determine associated energy conservation standards).

To address infrequent defrosts, AHT requested in its October 25, 2016 petition that the basic models shall be subject to an alternate two-part test procedure. AHT specified that the first part would be a 24-hour test starting in steady state conditions and including eight hours of door opening (according to ASHRAE Standard 72). The energy consumed in this test would be recorded ET1. The second part would be a defrost cycle test starting after steady state conditions were established and ending after the defrost cycle was complete. The duration of the defrost cycle, $t_{DI}$, and the energy consumed during the defrost cycle, ET2, would be recorded and combined with ET1 based on a once-per-week defrost frequency. In AHT's March 6, 2017 letter, AHT noted that although the standard duration of the defrost cycle was once-per-week, the basic models have an optional manual override that allows up to two defrost cycles per week and recommended revising the October 25 test procedure to reflect that. DOE has incorporated this proposal into the alternate test procedure, but requests that AHT or commenting parties provide additional data and/or information on how commonly the manual override is used.

With regard to the first issue, multi-mode operation, DOE has taken the position in the most recent commercial refrigeration equipment test procedure final rule, that self-contained equipment or remote condensing equipment with thermostats capable of operating at temperatures that span multiple equipment categories must be certified and comply with DOE's regulations for each applicable equipment category. *See* 79 FR 22291. In light of that policy determination, DOE declines at this time to provide AHT an interim waiver allowing testing only in the ice cream freezer mode. However, DOE seeks comment as part of the waiver determination process to determine if its previously stated position provides for a test requirement imposing an undue burden.

Regarding the second issue of infrequent defrosts, DOE has reviewed AHT's alternate procedure (based on the May 6, 2017 modification) and concludes that AHT's alternate test procedure results would be representative of the models' true energy consumptions and allow for the accurate measurement of the energy use of these equipment, while alleviating the testing problems associated with AHT's implementation of commercial refrigeration equipment testing for the specified multi-mode models. DOE also understands that absent a partial grant of an interim waiver, AHT's equipment cannot be tested and rated for energy consumption on a basis representative of its true energy consumption characteristics. Consequently, DOE has determined that this part of AHT's petition for waiver will likely be granted. Furthermore, DOE has determined that it is desirable for public policy reasons to grant AHT immediate relief for this part of the test procedure, pending a determination of the petition for waiver.

## III. Summary of Grant of Interim Waiver

For the reasons stated above, DOE has partially granted AHT's application for interim waiver from testing for its specified commercial refrigeration equipment basic models. The substance of the interim waiver is summarized below.

AHT is required to test and rate the AHT commercial refrigeration equipment multi-mode basic models SYDNEY, MIAMI, PARIS, MANHATTAN, MALTA, and IBIZA, according to the alternate test procedure as set forth in section IV, "Alternate Test Procedure."

AHT is permitted to make representations about the energy use of this basic model for compliance, marketing, or other purposes only to the extent that such products have been tested in

accordance with the provisions set forth in the alternate test procedure and such representations fairly disclose the results of such testing in accordance with 10 CFR 431.66.

DOE makes decisions on waivers and interim waivers for only those basic models specifically set out in the petition, not future models that may be manufactured by the petitioner. AHT may request that DOE extend the scope of a waiver or an interim waiver to include additional basic models employing the same technology as the basic models set forth in the original petition consistent with 10 CFR 431.401(g). In addition, DOE notes that granting of an interim waiver or waiver does not release a petitioner from the certification requirements set forth at 10 CFR part 431. See also 10 CFR 431.401(a) and (i).

The interim waiver shall remain in effect consistent with 10 CFR 431.401(h). Furthermore, this interim waiver is conditioned upon the presumed validity of statements, representations, and documents provided by the petitioner. DOE may rescind or modify a waiver or interim waiver at any time upon a determination that the factual basis underlying the petition for waiver or interim waiver is incorrect, or upon a determination that the results from the alternate test procedure are unrepresentative of the basic model's true energy consumption characteristics. See 10 CFR 431.401(k).

## IV. Alternate Test Procedure

EPCA requires that manufacturers use DOE test procedures when making representations about the energy consumption and energy consumption costs of equipment covered by the statute. (42 U.S.C. 6293(c); 6314(d)) Consistent representations about the energy efficiency of covered

equipment are important for consumers evaluating equipment when making purchasing decisions and for manufacturers to demonstrate compliance with applicable DOE energy conservation standards. Pursuant to its regulations applicable to waivers and interim waivers from applicable test procedures at 10 CFR 431.401, and after considering public comments on the petition, DOE will announce its decision as to an alternate test procedure for AHT in a subsequent Decision and Order.

During the period of the interim waiver granted in this notice, AHT shall test the multi-mode basic models listed in section III in each mode (ice-cream freezer, freezer, and refrigerator mode) according to the test procedure for commercial refrigeration equipment prescribed by DOE at 10 CFR part 431, subpart C, appendix B, for basic models, with the following modifications for defrost testing in ASHRAE 72-2005 (incorporated by reference at 10 CFR 431.63(d)), laid out in two parts:

> The first part shall be a 24-hour test starting in steady state conditions and including eight hours of door opening (according ASHRAE 72-2005). The energy consumed in this test shall be recorded, ET1.
>
> The second part shall be a defrost cycle test starting after steady state conditions are established. The defrost cycle is initiated and terminates after the defrost cycle is complete. The energy consumed during this defrost cycle, ET2, and the duration of the defrost cycle, tDI, shall be recorded.
>
> Based on the measured energy consumption in these two tests, the daily energy consumption (DEC) in kWh shall be calculated as
>
> $$DEC = ET1 \times \frac{(1440 - t_{NDI})}{1440} + \frac{E_{td}}{7}$$
>
> and
>
> $$t_{NDI} = \frac{t_{DS}}{7}$$
>
> and

$$t_{DS} = \frac{t_{DI}}{D}$$

and

$$E_{td} = ET2 * D$$

where

*DEC* = Daily Energy Consumption in kilowatt-hours (kWh);

*ET1* = energy expended during the first part of the test, in kWh;

*ET2* = energy expended during the second part of the test, in kWh;

$E_{td}$ = energy expended by defrosts per week

$t_{NDI}$ = normalized length of defrosting time per day, in minutes;

$t_{DS}$ = sum of defrost time per week;

*D* = maximum number of defrosts per week

7 = conversion factor of days per week;

1440 = conversion factor to adjust to a 24-hour period in minutes per day.

## V. Summary and Request for Comments

Through this notice, DOE announces receipt of AHT's petition for waiver from the DOE test procedure for certain basic models of AHT commercial refrigeration equipment, and announces DOE's decision to grant AHT an interim waiver from the test procedure for its commercial refrigeration equipment. DOE is publishing AHT's petition for waiver in its entirety, pursuant to 10 CFR 431.401(b)(1)(iv). The petition contains no confidential information. The petition includes a suggested alternate test procedure to determine the energy consumption of its

commercial refrigeration equipment. DOE will consider public comments on the petition in issuing its Decision and Order.

DOE solicits comments from interested parties on all aspects of the petition, including the suggested alternate test procedure and calculation methodology. Pursuant to 10 CFR 431.401(d), any person submitting written comments to DOE must also send a copy of such comments to the petitioner. The contact information for the petitioner's representative is Scott Blake Harris, Chairman, Harris, Wiltshire & Grannis, 1919 M Street, Eighth Floor, Washington, DC. 20036. All comment submissions must include the agency name and Case Number CR-006 for this proceeding. Submit electronic comments in WordPerfect, Microsoft Word, Portable Document Format (PDF), or text (American Standard Code for Information Interchange (ASCII)) file format and avoid the use of special characters or any form of encryption. Wherever possible, include the electronic signature of the author. DOE does not accept telefacsimiles (faxes).

Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit two copies to DOE: one copy of the document marked "confidential" with all of the information believed to be confidential included, and one copy of the document marked "non-confidential" with all of the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Issued in Washington, DC, on March 23, 2017.

Steven Chalk,
Acting Assistant Secretary
for Energy Efficiency and Renewable Energy.

**BEFORE THE**
**UNITED STATES DEPARTMENT OF ENERGY WASHINGTON, D.C. 20585**

| | |
|---|---|
| Docket No. EERE-2013-BT- TP-0025;<br><br>In the Matter of<br>Energy Efficiency Program: Test Procedure for Commercial Refrigeration Equipment | RIN 1904-AC99 |

## I. PETITION OF AHT COOLING SYSTEMS FOR WAIVER OF TEST PROCEDURE FOR COMMERCIAL REFRIGERATION EQUIPMENT

AHT Cooling Systems GmbH and AHT Cooling Systems USA Inc. (collectively AHT)[1] respectfully submit this Petition for Waiver and Application for Interim Waiver[2] from DOE's test procedure for commercial refrigeration equipment.[3]

AHT is a world leader in the production of plug-in refrigerators and freezers for the commercial sector. It currently manufactures its products in Austria, and imports them into the United States through its wholly-owned subsidiary in South Carolina. AHT USA is also about to open a new manufacturing facility in the Charleston area. AHT products are distributed to major supermarket retail chains, convenience stores, wholesalers, and consumer-packaged goods companies throughout the United States and Canada. AHT's pursuit of innovation has led it continuously to develop and market cutting-edge technology. Its philosophy focuses on sustainability, energy efficiency, innovation, and customer benefit. AHT's products, as is

[1] AHT's U.S. subsidiary is AHT Cooling Systems USA Inc., 3235 Industry Drive, North Charleston, South Carolina 29418 (tel. 843-767-6855). AHT's worldwide headquarters are AHT Cooling Systems GmbH, Werkgasse 57**,** 8786 Rottenmann, Austria (tel. 011-43-3614 / 2451-0).

[2] *See* 10 C.F.R. § 431.401 (petitions for waiver and interim waiver).

[3] *Id.* Part 431, Subpart C, Appendix B.

reflected by their use of propane as a refrigerant, are among the most energy efficient and environmentally friendly in the world.

Commercial refrigeration equipment, such as AHT's, will soon be subject to a new regulatory regime. This includes new test procedures[4] and efficiency standards.[5] The new procedures will apply to representations of energy efficiency or use made on and after March 28, 2017. The new standards will apply to products manufactured on or after March 27, 2017.

In part because of their advanced design and features, many AHT commercial refrigerators and freezers cannot be fairly evaluated by DOE's mandated testing protocols. First, because of their implicit assumptions, it is not clear which of the DOE tests should be applied to the AHT appliances. Second, any of the DOE tests would overstate the amount of energy used by the AHT appliances. Accordingly, a waiver of those test requirements is necessary.

## I. BASIC MODELS FOR WHICH A WAIVER IS REQUESTED

The basic models for which a waiver is requested are set forth in Appendix I. These models are all display merchandisers with transparent doors. They are distributed in commerce under the AHT brand name.

## II. NEED FOR THE REQUESTED WAIVER

As noted, the DOE test procedures will take effect on March 28, 2017. It is not clear which DOE test procedure should apply to AHT's advanced models, and all would grossly overstate the energy used by these models. There are two critical features of the AHT models that raise issues under the forthcoming testing procedure.

---

[4] *Id.* Part 431, Subpart C, Appendix B, as adopted, 79 Fed. Reg. 22277 (April 21, 2014).

[5] *Id.* § 431.66, as adopted, 79 Fed. Reg. 17725 (March 28, 2014).

### A. The AHT Appliances Are Multi-Mode.

The AHT appliances for which we seek a waiver are all multi-mode models; they have three modes of operation among which the user can choose merely by turning a switch. In one mode, the units operate as an ice cream freezer. In another mode, they operate as a regular commercial freezer. In yet another mode, they operate as a commercial refrigerator. The advantage to a user of having a single appliance that can operate in three different modes is obvious. And if a retail operator can purchase one appliance that can operate in three modes, rather than having to buy multiple appliances to meet the same needs, there are sustainability benefits as well. The problem is that the DOE rules implicitly assume that an appliance is exclusively an ice cream freezer, exclusively a standard commercial freezer, or exclusively a commercial refrigerator.[6] And the DOE rules mandate different testing protocols for an ice cream freezer than they do for a standard commercial freezer or a commercial refrigerator.

DOE testing rules often require that products be tested in their default configuration, or in the typical configuration. In the case of the AHT multi-mode appliances however, there isn't a "default" configuration or one "typical" configuration. The machines are designed to be easily and equally usable in all three modes. DOE precedent also suggests that when there is no default or typical mode for testing purposes, products with multiple configurations should be tested in the most energy consumptive mode. In this case, that would mean that AHT should test its products in the ice cream freezer mode and treat them as such for regulatory purposes.

Accordingly, AHT asks for a "waiver" to be allowed to do precisely that.

The only obvious alternative to testing in the most energy consumptive mode would be to require testing in all three modes. But such a requirement would be unique, burdensome, and

---

[6] *Id.* § 431.66.

inconsistent with the Energy Policy and Conservation Act (EPCA), which requires that the test procedures "shall be reasonably designed" and "shall not be unduly burdensome to conduct."[7] Moreover, in this situation it is not clear how one would evaluate whether an appliance passed a multiple test regime, particularly since testing the appliances as ice cream freezers would require using total display area (TDA) as the normalizing metric, while testing them in the other modes would require using volume as a normalizing metric. Such a testing regime would be both confusing and burdensome.

Finally, testing these appliances as ice cream freezers makes most sense because DOE has determined that TDA is the best metric for display equipment with transparent doors, and is moving increasingly in that direction in its testing protocols. As DOE has concluded, "where the function is to display merchandise for sale, TDA best quantifies the ability of a piece of equipment to perform that function."[8] That is surely true here.

### B. The AHT Appliances Do Not Have a Typical Defrosting Cycle.

The AHT appliances are innovative, and perhaps unique, in one other respect: their cooling coils are built into the body of the units. This means the cooling coils are not exposed to the air and do not get covered with frost. This also means the coils do not need to be defrosted. The DOE test procedure understandably assumes that commercial refrigerators and freezers have cooling or evaporator coils that need to be defrosted for the equipment to function effectively. Indeed, the Technical Support Document for the test procedure essentially defines "defrosting" to mean melting ice from evaporator coils:

[7] 42 U.S.C. § 6293(b)(3).

[8] 79 Fed. Reg. 17725, 17741 (March 28, 2014).

> As the air in the refrigerated space is cooled, water vapor condenses on the surface of the evaporator coil….There are several methods available for defrosting the evaporator coil…[9]

In addition, the ASHRAE test procedure mandated by the DOE regulations provides that the defrost adequacy assurance test "shall verify that any defrost setting and arrangement is adequate to melt all frost and ice from coils and flues and drain it out of the refrigerator."[10] Based on the assumption that all refrigerators and freezers that have evaporator coils from which frost must be melted regularly in order to function, the test procedure calls for starting testing with a full defrost cycle, and may require additional defrost cycles in a 24-hour period before the test is complete (depending on the expected operation of the model).

AHT appliances, however, have no need to defrost their coils. Rather, small amounts of frost can build up on the inner walls of the cabinet when the appliances are in a freezer mode. But this is a strictly esthetic matter that is easily resolved. Thus, rather than running one or more defrosting cycles a day to keep the machines operating efficiently, AHT appliances have a defrost (in the generic sense rather than as defined by DOE/ASHRAE) function that operates just once per week to keep the machines looking good.[11] As a result, the test procedure, which provides for at least one full defrost cycle in a 24-hour period is not appropriate for these models. *It would overstate the energy usage from the defrosting function by at least a factor of seven.*

[9] DOE, Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment; Commercial Refrigeration Equipment (Feb. 2014), § 3.3.1.11 (Defrost Cycle; Defrost Mechanism).

[10] ANSI/ASHRAE Standard 72-2005, "Method of Testing Commercial Refrigerators and Freezers," § 7.8 (Defrost Adequacy Assurance). ASHRAE 72-2005 is incorporated by reference in the DOE test procedure. 10 C.F.R. § 431.63(d)(1).

[11] We also note that AHT appliances have a manual override, such that a user *could* activate the defrost cycle a second time in any one week period. But the default automatic setting, and we expect the typical use, is one defrost cycle per week.

Accordingly, AHT asks for a waiver to test its appliances with the defrost cycle activated in a way that reflects the actual operation of the units. To this end, AHT proposes to test the appliances in two phases. Phase one shall be a 24-hour test according to ASHRAE 72 including eight hours of door openings but without defrost. The second phase should be a separate measurement of the energy used during the defrost cycle. One-seventh of the measured energy in phase two should be added to the energy measured in phase one. This approach would translate the once-a-week defrost cycle into an average daily energy usage factor.

## III. PROPOSED ALTERNATE TEST PROCEDURE

In line with the waivers outlined above, AHT proposes the following alternate test procedure to evaluate the performance of the basic models listed in Appendix I of this petition and application.

Effective March 28, 2017, AHT shall be required to test the performance of the basic models listed in Appendix I according to the test procedures for commercial refrigeration equipment prescribed by DOE at 10 C.F.R. Part 431, Subpart C, Appendix B, except as follows.

The basic models shall be tested and rated as ice cream freezers (Integrated Average Temperature of -15°F +/- 2.0°F and use of TDA).

The basic models shall be subject to the following testing instead of the corresponding defrost testing in the test procedure.

**The first part** shall be a 24-hour test starting in steady state conditions and including eight hours of door opening (according ASHRAE Standard 72). The energy consumed in this test shall be recorded, *ET1*.

**The second part** shall be a defrost cycle test starting after steady state conditions are established. The defrost cycle is initiated and terminates after the defrost cycle is complete. The

energy consumed during this defrost cycle, *ET2*, and the duration of the defrost cycle, $t_{DI}$, shall be recorded.

Based on the measured energy consumption in these two tests, the daily energy consumption (DEC) in kWh shall be calculated as

$$DEC = ET1 \times \frac{(1440 - t_{NDI})}{1440} + \frac{ET2}{7}$$

and

$$t_{NDI} = \frac{t_{DI}}{7}$$

where

*DEC* = Daily Energy Consumption in kilowatt-hours (kWh);

*ET1* = energy expended during the first part of the test, in kWh;

*ET2* = energy expended during the second part of the test, in kWh;

$t_{NDI}$ = normalized length of defrosting time per day, in minutes;

$t_{DI}$ = length of time of one defrosting cycle, in minutes;

7 = conversion factor of days per week;

1440 = conversion factor to adjust to a 24-hour period in minutes per day.

The waiver shall continue until DOE adopts an applicable amended test procedure.

## IV. REQUEST FOR INTERIM WAIVER

AHT also requests an interim waiver for its testing and rating of the basic models listed in Appendix I. Based on its merits, the petition for waiver is likely to be granted. Further, it is essential that an interim waiver be granted, as AHT plans to distribute units of the models that would be affected by the DOE rule as otherwise applicable on and after the March 28, 2017, compliance date. Without waiver relief, AHT will be at a competitive disadvantage in the

market for these important products and would suffer economic hardship. AHT would be subject to requirements that clearly should not apply to such products.

## V. OTHER MANUFACTURERS

A list of manufacturers of all other basic models distributed in commerce in the United States and known to AHT to incorporate overall design characteristic(s) similar to those found in the basic model(s) that are the subject of the petition is set forth in Appendix II.

* * * *

AHT requests expedited treatment of the Petition and Application.

Respectfully submitted,
/S/
Scott Blake Harris
John A. Hodges

**Harris, Wiltshire & Grannis LLP**
1919 M Street, NW Washington, DC
20036
(202) 730-1313

***Counsel to AHT Cooling Systems GmbH and AHT Cooling Systems USA Inc.***

October 25, 2016

## APPENDIX I

The waiver and interim waiver requested herein should apply to testing and rating of the following basic models that are manufactured by AHT:

SYDNEY ^ * MIAMI ^ *

PARIS ^ *

MANHATTAN ^ *

MALTA ^ * IBIZA ^ *

II. **The models use the following model number layout:**

SYDNEY, MIAMI, etc. – Represent the name of the model platform.

(^) – Represents characters in the model number that correspond to the size.

(*) – Represents characters in the model number that correspond to marketing features.

The * and ^ characters have no impact on the compartment function, product class, or test method.

## APPENDIX II

The following are manufacturers of all other basic models distributed in commerce in the United States and known to AHT to incorporate overall design characteristic(s) similar to those found in the basic model(s) that are the subject of the petition for waiver.

AMF Sales & Associates (importing LUCKDR)
ARNEG USA
Avanti Products LLC Beverage
Air
Dellfrio (importing Liebherr cabinets)
Electrolux Home Products
Excellence
Fogel de Centroamerica S.A.
Foshan City Shunde District Sansheng Electrical Manufacture Co., Ltd.
Hillphoenix
Hussmann
Innovative DisplayWorks Inc.
Jiangsu Baixue Electric Appliances Co., Ltd.
Metalfrio Solutions Mexico S.A.
Mimet S.A.
Minus Forty Technologies Corp. MTL
Cool
Novum USA
Ojeda USA
Panasonic
PREMIERE Corporation
Sanden Vendo
Silver King
Stajac Industries
Thermell Manufacturing
True Manufacturing Co.
Turbo-Air
Vestfrost Solutions

HWG | HARRIS, WILTSHIRE & GRANNIS LLP

6 March 2017

Ms. Ashley Armstrong
Office of Energy Efficiency
United States Department of Energy
1000 Independent Avenue, SW
Washington, DC

*Re: AHT Petition for Waiver & Interim Waiver*

Dear Ashley:

We are writing to respond to your e-mail of February 21, 2017, asking for additional information about the multi-mode commercial refrigeration equipment as to which AHT has sought a testing waiver.

As set forth in our waiver petition, the defrost cycle[1] on the six covered AHT models[2] operates just once per week, rather than once per day as the mandated testing assumes – meaning that the mandated testing overestimates the amount of energy actually used in the defrost cycle by a factor of seven. As we also noted in our petition, the AHT appliances have a manual override, such that a user *could* activate the defrost cycle a second time in any one week period. But the default setting, which we expect to be the typical use, is one defrost cycle per week.

You asked, first, how the manual override worked. Simply put, the factory default is set such that the defrost cycle operates once per week. As noted, if the customer wants an additional defrost cycle, there is an override allowing one, and only one, additional defrost per week. AHT assures there can be no more than two defrosts per week by setting the parameter "minimum interval between defrosts" to 84 hours. This is equivalent to 3.5 days, and it cannot be changed by the customer. Thus the operation of any defrost cycle means that there cannot be another defrost cycle – whether by default or by override – for 84 hours. This defrost cycle "lock" guarantees there can be no more than one defrost cycle in 3.5 days, or two defrost cycles in any seven-day period. There are no other ways for the defrost cycle to operate. Specifically, there are no controls or systems that allow ambient conditions to initiate or end a defrost cycle.

You also asked for test data showing how AHT's proposed alternative test procedure would work (and how long the defrost cycle operates). We have attached a PowerPoint providing this information.[3] Test 1 shows the model in question tested as a commercial refrigerator using the

---

[1] It is a defrost cycle in the colloquial sense rather than as defined by DOE/ASHRAE.

[2] Sydney; Miami; Paris; Manhattan; Malta; and Ibiza.

[3] The PowerPoint contains confidential, trade secret and proprietary information and, thus, is entitled to exemption from public disclosure. We thus request that it be treated in its entirely as confidential, and that it not be disclosed to third parties. We believe it is entitled to full protection of all confidentiality and non- disclosure provisions in the Freedom of Information Act, and other statutes and rules.

ANSI/ASHRAE 72 protocol without the defrost cycle. Test 2 is a test of one defrost cycle. This is followed by a calculation for daily energy consumption in kilowatt-hours for a maximum of both one defrost per week (D=1) and two defrosts per week (D=2). This allows you to see the total energy consumption both in default mode (which we think is the proper calculation) and if the consumer exercises the one weekly override.

Finally, you asked for field test data that shows the model in operation over the course of a month. We do not have such data. We would be willing to provide such data, but it will take time to gather it – and if the interim waiver is not promptly granted, these units will be banned from manufacture or import within three weeks. Nor do we think this extensive data is needed for the Department to act on the Interim Waiver Petition. So we ask that this request be deferred until the public comment cycle.

We hope this is all the information you will need to grant AHT's pending Interim Waiver Petition.

Respectfully submitted,

/S/

Scott Blake Harris
John A. Hodges

***Counsel to AHT Cooling Systems GmbH***
***and AHT Cooling Systems USA Inc***

[FR Doc. 2017-06107 Filed: 3/27/2017 8:45 am; Publication Date: 3/28/2017]